

Patent Claims

1. An optical communication network (20) in which optical signals are exchanged via a first data link between a first network node device (1) and a second network node device (6) with interposition of a number of further interconnected network node devices (2, 3, 4, 5), characterized in that, after a disturbance on the first data link, a third network node device (3) sends a signaling signal (S32) to a fourth network node device (2) connected to the third network node device (3) for setting up a second data link which acts at least partially as a standby for the first data link, which signaling signal (S32) contains a parameter (NRR, n) determined by the third network node device (3) on the basis of which it is determined whether the fourth network node device (2) is responsible for setting up the second data link or not.
2. The optical communication network (8) as claimed in claim 1, in which the parameter (NRR) contains information with respect to the distance between the third network node device (3) and the second network node device (6).
3. The optical communication network (8) as claimed in one of the preceding claims, in which the distance between the fourth network node device (3) and the second network node device (6) is additionally taken into consideration in the determination as to whether the fourth network node device (2) is responsible for setting up the second data link or not.
4. The optical communication network (8) as claimed in one of the preceding claims, in which the

distance between the fourth and the third network node device (2, 3) is additionally taken into consideration in the determination as to whether the fourth network node device (2) is responsible for setting up the second data link or not.

5

5. The optical communication network (8) as claimed in claim 4, in which the fourth network node device (2) is responsible for setting up the second data link if the distance between the fourth and the second network node device (2, 6) is not less than the distance, adapted by the distance between the fourth and third network node device (2, 3), between the third and second network node device (3, 6).

10

15

6. The optical communication network (8) as claimed in one of the preceding claims, in which one of the network node devices (2, 3, 4) which is located on the path, used by the first data link, from the fault location in the direction of the network node device (1) which has set up the first data link, is responsible for setting up the second data link.

20

25

7. The optical communication network (8) as claimed in one of claims 1 to 5, in which one of the network node devices (5) which is located on the path, used by the first data link, from the fault location in the direction of the destination network node device (6) of the first data link, is responsible for setting up the second data link.

30

8. The optical communication network (8) as claimed in one of the preceding claims, in which the parameter (NRR) determined by the third network node device (3) or a further parameter (n) transmitted to the fourth network node device (2)

35

202070101036401

contains information on whether the third network node device (3) has received a further signaling signal (S31), corresponding to the signaling signal (S32), from a further network node device (4) connected to the third network node device (3).

9. The optical communication network (8) as claimed in claim 8, in which the parameter (NRR) or the further parameter (n) contains information on which number of further network node devices (4) have sent to corresponding network node devices (3) a further signaling signal (S31) corresponding to the signaling signal (S32), the further network node devices (4) being connected directly or indirectly to the third network node device (3).

10. The optical communication network as claimed in claim 9, in which the fourth network node device (2) is responsible for setting up the second data link if the number corresponds to a predetermined number.

11. An optical communication network (20) in which optical signals are exchanged via a first data link between a first network node device (1) and a second network node device (6) with interposition of a number of further interconnected network node devices (2, 3, 4, 5), characterized in that, after a disturbance on the first data link, a third network node device (3) sends a signaling signal (S32) to a fourth network node device (2) connected to the third network node device (3) for setting up a second data link which acts at least partially as a standby for the first data link, and the fourth network node device (2) determines on the basis of a Bernoulli experiment whether it is responsible for setting up the second data link

or not.

12. The optical communication network (20) as claimed  
in claim 11, in which the number of links  
5 connected to the fourth network node device (2) is  
taken into consideration in the Bernoulli  
experiment.
13. The optical communication network (20) as claimed  
10 in claim 11 or 12, in which the distance between  
the fourth network node device (2) and a further  
network node device, particularly the first and/or  
second network node device (6), is taken into  
consideration in the Bernoulli experiment.
14. The optical communication network (20) as claimed  
15 in one of the preceding claims, in which the  
second data link extends wholly or partially via a  
different undisturbed path from the first data  
20 link.
15. A network node device (2) which is designed and  
established in such a manner that it can be used  
as fourth network node device (2) in an optical  
25 communication network (20) as claimed in one of  
claims 1 to 14.
16. The network node device (3) which is designed and  
established in such a manner that it can be used  
30 as third network node device (3) in an optical  
communication network (20) as claimed in one of  
claims 1 to 14.
17. An optical information transmission method in  
35 which optical signals are exchanged via a first  
data link between a first network node device (1)  
and a second network node device (6) with  
interposition of a number of further

10036401.010702

interconnected network node devices (2, 3, 4, 5),  
characterized in that, after a disturbance on the  
first data link, a third network node device (3)  
sends a signaling signal (S32) to a fourth network  
5 node device (2) connected to the third network  
node device (3) for setting up a second data link  
which acts at least partially as a standby for the  
first data link, which signaling signal (S32)  
contains a parameter (NRR, n) determined by the  
10 third network node device (3) on the basis of  
which it is determined whether the fourth network  
node device (2) is responsible for setting up the  
second data link or not.

10036401.010702